

What is claimed is:

1. A motion control apparatus for a vehicle, comprising:

road data storing means for storing road data;

own vehicle position detecting means for detecting an own vehicle position on the road data;

vehicle speed detecting means for detecting an own vehicle speed;

corner radius arithmetically operating means for obtaining a radius of a corner existing on a route on which an own vehicle is traveling at present, based on the road data and the own vehicle position;

motion parameter detecting means for detecting motion parameters expressing a turning motion state of the own vehicle;

actual turning radius arithmetically operating means for arithmetically operating and estimating an actual turning radius when the own vehicle enters the corner, based on at least the own vehicle speed and the motion parameters;

radius difference calculating means for calculating a difference between the radius arithmetically operated by the corner radius arithmetically operating means and the actual turning radius; and

motion state control means for controlling a motion state of the own vehicle based on a calculation by the radius difference calculating means so that the actual turning radius becomes close to the radius of the corner.

2. A motion control apparatus for a vehicle, comprising:

road data storing means for storing road data;

own vehicle position detecting means for detecting an own vehicle position on the road data;

vehicle speed detecting means for detecting an own vehicle speed;

corner radius arithmetically operating means for obtaining a radius of a corner existing on a route on which an own vehicle is traveling at present, based on the road data and the own vehicle position;

motion parameter detecting means for detecting motion parameters expressing a turning motion state of the own vehicle;

actual turning radius arithmetically operating means for arithmetically operating and estimating an actual turning radius when the own vehicle enters the corner, based on at least the own vehicle speed and the motion parameters;

radius difference calculating means for calculating a difference between the radius arithmetically operated by the corner radius arithmetically operating means and the actual turning radius;

motion state determining means for determining a motion state of the own vehicle at the corner with respect to at least discrimination of an understeer state and an oversteer state, based on a calculation by the radius difference calculating means; and

motion state control means for controlling the motion state of the own vehicle to cancel the understeer state or the oversteer state, which is determined by the motion state determining means.